

wheel;

15 a further drive extending around said second drive pulley and said further final driven wheel  
so that when said second drive pulley is rotated, said further drive rotates said further final  
driven wheel;

said drive being a first belt drive; and

said further drive being a second belt drive.

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### Remarks.

1/. The Examiner has asked for information as to the ownership of the subject  
application and the parent application USSN 09/562,167 which issued as US. Pat. No  
15 6,409,376.

The subject application was filed 03/14/2001 claiming priority from both the USSN  
09/562,167 filed 05/2/2000 and USSN 09/590,347 filed 06/8/2000 Applications.

20 Ric Joranlien was an inventor of the subject matter of claims 20-23 and 41-42 of USSN  
09/562,167 filed 05/2/2000.

Ric Joranlien was also an inventor of the subject matter of claims 1-21 of USSN 09/590,347

filed 06/8/2000 now US. Pat. No. 6,467,945.

Additionally, Ric Joranlien was an inventor of the subject matter of claims 1-45 of the subject application.

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Accordingly, Applicants are of the opinion that there is a chain of copendency between the aforementioned three applications. Additionally, Ric Joranlien is an inventor in the subject matter of each of the aforementioned three applications.

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Furthermore, Ric Joranlien is under a contractual obligation to assign the ownership of the aforementioned subject matter to Knight Manufacturing Corp.

2/. Applicants file herewith a duly signed declaration naming Chris Albright and Rick Joranlien as inventors in the subject application. Applicants representative the undersigned has sent a declaration to the inventors Claude McFarlane and Rick Joranlien and will file the duly executed declaration for this application on receipt thereof from the inventors.

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3/ Claim 45 has been amended to remove therefrom two of the period.

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4/ -10/. Claims 1-45 have been rejected under 35 U.S.C. 112 as being indefinite.

More specifically, the Examiner has indicated that the phrase "and the like" in claims 1 and

45 renders these claims indefinite.

Similarly, in claim 5, the phrase "or the like" renders this claim indefinite.

5 Also in claim 40, the Examiner has stated that there is no antecedent basis for "said drive wheel".

In claim 42 the Examiner has indicated that there is no antecedent basis for "the tractor".

10 Additionally, with regard to claim 45, the Examiner has stated that there is a lack of antecedent basis for "said drive wheel".

Accordingly, Applicants have amended claims 1, 40, 42 and 45 as suggested by the Examiner. Therefore, Applicants are of the opinion that as a result of the amendments,  
15 claims 1, 40, 42 and 45 and the claims dependent thereon are definite and that the rejection under S112 has been overcome by the amendments.

11/-12/. Claims 1, 3-5, 12-18, 20, 23, 24, 36, 43 and 44 have been rejected under 35 U.S.C. 102 as being anticipated by EP 0706755 to Van der Plas.

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EP 0706755 to Van der Plas. teaches:

**Column 2, lines 37-44** "The mixing chamber may be provided with one or more rotors. If

more than one rotor, for example two rotors are provided, said rotors may be fitted with mixing means arranged in overlapping relationship, seen in plan view. The mixing means of the various rotors may be positioned at different heights thereby and rotate in intersecting paths."

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**Column 5, lines 5-12** "In the embodiments the device according to the invention is provided with one or two rotors 6, which are rotatable about a substantially vertical axis. Like the other parts of the device, the rotors 6 are only diagrammatically indicated, and in particular the mixing means secured to the rotors, which may have a great many different shapes, are only diagrammatically indicated as disc-shaped parts 7 in most of the Figures. "

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**Column 5, lines 24-32** "A first embodiment is shown in Figures 1 - 16. Figure 1 is a plan view of a device comprising two rotors 6, whereby the lowermost of the (diagrammatically illustrated) mixing means overlap (seen in plan view). The lowermost mixing means 7 are thereby larger than the mixing means 7 disposed thereabove. The rotors 6 are journaled in the bottom 9 of the device, as well as in supporting beams 12, which are secured to the upper edge of the side wall 11."

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**Column 6, lines 3-14** "The diagrammatically illustrated vertical rotors may have any desired shape and the mixing means 7 may be provided with any desired type of catching means, such as blades, whilst in addition they may be slightly helical, so that the material is moved upwards during rotation. The two rotors 7 may rotate in the same direction, as shown in the embodiment, as a result of which some cutting of the material will take place by the

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overlapping mixing means. The rotors 7 may also rotate in opposite directions, to which end the drive chain 4 must be guided into a different path, of course, or whereby a different type of drive is used."

5     **Column 8, lines 38-57.** " Figure 16 shows an embodiment of the device wherein the rotor is provided with mixing means in the shape of downwardly extending parts 75, which extend from a higher part 76 of the rotor to the bottom 9 of the mixing chamber 8. At their bottom side the parts 75 are provided with blades 77. Preferably the parts 75 are spring parts. The blades 77 may alternately extend at an angle in radial direction, so that the material to be  
10     mixed is moved towards the outside or towards the inside.

If more than one rotor 6 is present in a mixing chamber, the paths of the mixing means of the respective rotors may intersect, whereby the movements of the various rotors are attuned to each other in such a manner, that the mixing means do not touch each another. The rotors  
15     will rotate in opposite directions thereby.

Also if two adjacent rotors 6 are fitted with mixing means 75, 77 according to Figure 16, the paths of movement of said mixing means 75, 77 may overlap, whereby the higher part 76 is provided with the necessary recesses."

20     **Column 9, lines 17-25.** "A device whereby at least two rotors are present, whose mixing means overlap, seen from above.

A device whereby the paths of the mixing means of several rotors intersect each other, whereby the rotors rotate in opposite directions and means are provided for attuning the movements of said rotors to each other.

5 A device whereby said rotors comprise a helical mixing means and that their rotations are attuned to each other."

An important feature of the present invention is the provision of staggered flighting on the core for interrupting the feed between the first and second portions of the flighting.

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Applicants have amended claim 1 by the inclusion therein of the subject matter of claim 21. Modified claim 1 clearly defines and emphasizes the interruption between the respective portions of the flighting.

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The disclosure of the '755 reference relative to the rotors is reproduced above and does not in any way teach or give a hint concerning the provision of staggered or interrupted flighting. In fact the '755 reference teaches the interaction between the flighting of one rotor with the flighting of an adjacent rotor not a relationship between one portion of the flighting with another portion of the flighting of the same rotor.

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Accordingly, Applicants are of the opinion that modified claim 1 is not anticipated by the disclosure of the '755 reference and that the subject matter of claim 1 is nonobvious over the teachings of the '755 reference.

Furthermore, claims 3-5, 12-18, 20, 23, 24, 36, 43 and 44 are dependent on modified claim 1 and define further novel and nonobvious features over the '755 reference and should be allowable thereover.

5       **13/.**           Claims 1, 3, 13-18, 20-24 and 43 have been rejected under 35 U.S.C. 102 as being anticipated by US. Pat. No. 5,823,667 to Fukushima.

US. Pat. No. 5,823,667 to Fukushima teaches a mixer having a housing 8 in which gears are disposed. However, in the '667 reference, the gearbox housing 8 is disposed above the auger  
 10       which would make the feeding of bales of hay into the container very difficult. Also, the opening 9 is not disposed "above" and remote from the housing.

Furthermore, modified claim 1 recites all of the claim limitations recited in claim 41 of the parent application USSN 09/562,167 filed 05/2/2000. that was allowed over the '667  
 15       reference and which was subsequently cancelled from the USSN 09/562,167 filed 05/2/2000 and introduced as claim 1 into the subject application during the pendency of the USSN 09/562,167 application.

Accordingly, Applicants are of the opinion that modified claim 1 is not anticipated by the  
 20       disclosure of the '667 reference and that the subject matter of claim 1 is nonobvious over the teachings of the '667 reference.

Furthermore, claims 3, 12-18, 20, 22-24 and 43 are dependent on modified claim 1 and

define further novel and nonobvious features over the '667 reference and should be allowable thereover.

Claim 21 has been cancelled.

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14/. Claims 1, 3-5, 13, 17, 18, 20, 24, 36, 43 and 44 have been rejected under 35 USC S 102(b) as being anticipated by US. Pat. No. 3,421,740 to Behrens.

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US. Pat. No. 3,421,740 to Behrens teaches a mixer having a housing which encases gears 80, 82 and 86. Also, a portion of the wall of the container extends from such housing as shown in Figs. 2 and 4.

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However, modified claim 1 defines over the '740 reference in that "all" of the wall is recited as being disposed above the housing. Also, the axis of the auger is recited as being "substantially vertical" whereas the '740 reference teaches a horizontally disposed auger.

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Furthermore, modified claim 1 recites all of the claim limitations recited in claim 41 of the parent application USSN 09/562,167 filed 05/2/2000. that was allowed over the '740 reference and which was subsequently cancelled from the USSN 09/562,167 filed 05/2/2000 and introduced as claim 1 into the subject application during the pendency of the USSN 09/562,167 application.

Accordingly, Applicants are of the opinion that modified claim 1 is not anticipated by the



disclosure of the '740 reference and that the combination of claim 1 is nonobvious over the teachings of the '740 reference.

Furthermore, claims 3-5, 13, 17, 18, 20, 24, 36, 43 and 44 are dependent on modified claim 1 and define further novel and nonobvious features over the '740 reference and should be allowable thereover.

**15/-16/.** Applicants confirm that at the time the invention was made the subject matter of claims 20-23, 41 and 42 of USSN 09/562,167 filed 05/2/2000 and the subject matter of all of the claims of the subject application were commonly owned.

**17/.** Claims 2, 26-30, 37 and 38 have been rejected under 35 U.S.C. 103(a) as being unpatentable over EP ' 755.

Regarding claim 2, the '755 reference does not teach the removal of the "final driven wheel and auger" as a unit, which is an important feature of the present invention. Applicants are of the opinion that such removal as a "unit" is not obvious over the applied reference and should be allowable thereover.

Furthermore, claims 26-30 are dependent on claim 2 and define further nonobvious features over the applied '755 reference.

Claim 37 recites "said further axis of rotation of said drive wheel is disposed *between* said

axis of rotation of said auger and said rotational axis of said further auger." (italics added for emphasis).

In Figs. 4 and 5 of the '755 reference, the axis of rotation of the "drive wheel" 4 is not disposed "between" the axes of rotation of the augers 6 but is disposed considerably to the right thereof as viewed in Fig. 5.

Additionally, with reference to claim 38, the '755 reference does not teach the axis of one of the augers 6 as being disposed between the axis of rotation of the other auger 6 and the "further axis of rotation of said drive wheel" 4.

Consequently, Applicants are of the opinion that claims 37 and 38 both teach a nonobvious improvement over the disclosure of the '755 reference and should be allowable thereover.

**18/.** Claim 39 has been rejected under 35 U.S.C. 103(a) as being unpatentable over EP ' 755 as applied to claim 36 in view of '667.

The Examiner applied the '667 reference against claim 36. under Section 102. However, Applicant is of the opinion that claim 39 recites an arrangement illustrated in Fig. 10 of the drawings. As shown in Fig. 10 and as recited in claim 39, "....said further final driven wheel (140) being a further gear wheel having further gear teeth which are driven by said final driven wheel (28e)...."

Applicant is of the opinion that even if the teachings of the '755 and '667 references were combined as suggested by the Examiner, the combination as recited in claim 39 and as illustrated in Fig. 10 is not disclosed and that the combination of claim 39 is nonobvious over the applied references.

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**19/.** Claims 40 and 41 have been rejected under 35 U.S.C.103(a) as being unpatentable over EP ' 755, in view of '740.

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Both claims 40 and 41 depend from claim 2 which recites removal of the auger and driven wheel as a unit. This is an important feature of the present invention as it greatly simplifies inspection and repair of the apparatus. The " removal as a unit" feature is not taught in either of the applied references. Therefore, applicants are of the opinion that claims 40 and 41 define a nonobvious improvement over the combined '755 and '740 references and should be allowable thereover.

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**20/.** Claim 19 has been rejected under 35 U.S.C.103(a) as being unpatentable over EP ' 755, in view of US. Pat. No. 5,429,436 to Stone.

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US. Pat. No. 5,429,436 to Stone shows a vertical mixer having a planetary gearbox 103 disposed within a stationary pedestal tube 102 and a conical core 113.

Claim 19 depends from modified claim 1 and includes further features which are not taught by a combination of the '755 and '436 references. More specifically, the staggered flighting

feature is not taught by the combination of the '755 and '436 references. Accordingly, Applicants are of the opinion that claim 19 defines a nonobvious improvement over the combined references.

5     **21/.**           Claim 25 has been rejected under 35 U.S.C.103(a) as being unpatentable over EP ' 755. in view of US. Pat. No. 5,429,436 to Stone as applied to claim 19 and further in view of US. Pat. No. 384,719 to Safely.

10    US. Pat. No. 384,719 to Safely discloses a bran husk remover having a container E, and auger I and a drive J .

Claim 25 depends from modified claim 1 and includes further features which are not taught by a combination of the '755, '436 and '719 references. More specifically, the staggered  
15    flighting feature is not taught by the combination of the '755, '436 and '719 references. Accordingly, Applicants are of the opinion that claim 25 defines a nonobvious improvement over the combined references.

20    **22/.**           Claims 1-24 and 26-28 have been rejected under 35 U.S.C.103(a) as being unpatentable over '436. in view of '740.

The staggered flighting feature of modified claim 1 is not taught in the '436 or the '740 references. Therefore, even if the teachings of the applied references were combined, such combination would not teach or provide a hint as to the arrangement claimed in modified

claim 1. Accordingly, Applicants are of the opinion that modified claim 1 defines a nonobvious improvement over the applied references and should be allowable thereover.

Claims 2-24 and 26-28 are dependent on modified claim 1 and define further nonobvious features over the applied references. Therefore, Applicants are of the opinion that claims 2-24 and 26-28 should also be allowable.

23/. Claim 42 been rejected under 35 U.S.C.103(a) as being unpatentable over '436. in view of '740.

Claim 42 is dependent on modified claim 1. More specifically, the staggered flighting feature of modified claim 1 is not taught in the '436 or the '740 references. Therefore, even if the teachings of the applied references were combined, such combination would not teach or provide a hint as to the arrangement claimed in claim 42 which is dependent on modified claim 1. Accordingly, Applicants are of the opinion that claim 42 defines a nonobvious improvement over the applied references and should be allowable thereover.

24/. Claim 45 been rejected under 35 U.S.C.103(a) as being unpatentable over '755. in view of '740.

The staggered flighting feature of modified claim 45 is not taught in the '755 or the '740 references. Therefore, even if the teachings of the applied references were combined, such

combination would not teach or provide a hint as to the arrangement claimed in modified claim 45. Accordingly, Applicants are of the opinion that modified claim 45 defines a nonobvious improvement over the applied references and should be allowable thereover.

5 With regard to claims 31-35 referred to in the Conclusion of the Office Action, the Examiner has indicated that the "staggered flight portions" would have been obvious in view of the '740 reference.

10 However, the '740 reference as clearly shown by the arrows in Fig. 2 feeds the material in a flow direction along one portion towards a flow in an opposite direction along an adjacent portion of the auger. In modified claim 1 from which claims 31-35 depend, the recitation "such that the feed moves from said housing towards said opening;" is an entirely different arrangement from that disclosed in the '740 reference in which the feed moves in opposite directions along the respective portions towards the gap between the portions.

15

Accordingly, Applicants are of the opinion that claims 31-35 define a nonobvious improvement over the teachings of the '740 reference and should be allowable thereover.

Reexamination and reconsideration of the claims as amended is respectfully requested.

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By this amendment, claims 1, 5, 39 and 45 have been amended to emphasize important features of the present invention. Claim 21 has been canceled. The dependency of claims 40 and 42 have been amended. Claims 1-20 and 22-45 remain in this application.

Allowance of claims 1-20 and 22-45 is earnestly solicited.

Attached hereto is a marked up version showing the changes made to the claims. The attached pages are captioned "**Version with markings to show changes made.**"

5

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "David J. Archer".

David J. Archer.

10  

Reg. No. 31,076.

Applicant's representative

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**"Version with markings to show changes made."**

**In the claims:**

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**Please amend claim 1 as follows:**

1. (once amended) A mixer apparatus for mixing livestock feed [and the like], said apparatus comprising:

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a container for the reception therein of the feed;

said container including:

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a housing;

a wall extending away from said housing, such that substantially all of said wall is disposed above said housing, said wall defining an opening disposed above and remote from said housing for the reception therethrough of the feed, the arrangement being such that said housing and said wall define therebetween an enclosure for the feed received through said opening;

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an auger disposed within said enclosure, said auger having an axis of rotation extending



substantially vertically through said housing;

said auger including:

5           a core;

          flighting connected to said core so that when said auger rotates, feed disposed  
within said enclosure is mixed;

10           said flighting including:

          a first portion; [and]

          a second portion staggered relative to said first portion such that  
15       movement of the feed between said first and second portions is interrupted [.];

said first portion having a first and a second end, said first end being disposed adjacent to  
said housing;

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said second portion having a first and a second extremity, said first extremity being  
disposed in an adjacent spaced relationship relative to said second end of said first  
portion such that the feed moves from said housing towards said opening;

a substantially horizontally disposed drive pinion; and

a final driven wheel driven by said drive pinion and disposed substantially horizontally

5 within said housing, said pinion and final driven wheel intermeshing, said final driven  
wheel being rotatable about said axis of rotation, said final driven wheel being drivingly  
connected to said auger so that when said final driven wheel is rotated within said  
housing, said auger is rotated therewith within said enclosure for mixing the feed.

10

**Please amend claim 5 as follows:**

15 5. (once amended) A mixer apparatus as set forth in claim 4 wherein

said container further includes:

a hitch bar secured to said frame for facilitating transportation of said mixer apparatus by a  
20 tractor [or the like].

**Please cancel claim 21 without prejudice.**

**Please amend claim 39 as follows:**

39 (once amended) A mixer apparatus as set forth in claim 36 wherein

5 said drive wheel is a drive gear pinion;

said drive gear pinion having a plurality of teeth;

10 said final driven wheel being a gear wheel having gear teeth which intermesh with said plurality of teeth of said drive gear pinion so that when said drive gear pinion is rotated, said final driven wheel and auger are rotated;

said mixer apparatus further including:

15 a further final driven wheel, said further final driven wheel being a further gear wheel having further gear teeth which are driven by said final driven wheel so that when said drive gear pinion is rotated, said final driven wheel and auger are rotated and said further final driven wheel and further auger are rotated.

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**Please amend claim 40 as follows:**

40 (once amended) A mixer apparatus as set forth in claim [29] 30 wherein

said drive wheel is a first drive sprocket;

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said mixer apparatus further including:

a second drive sprocket secured to said first drive sprocket and disposed coaxially relative to said first drive sprocket;

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a drive extending around said first drive sprocket and said final driven wheel so that when said first drive sprocket is rotated, said drive rotates said final driven wheel;

a further final driven wheel, said further final driven wheel being a further driven sprocket wheel;

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a further drive extending round said second drive sprocket and said further final driven wheel so that when said second drive sprocket is rotated, said further drive rotates said further final driven wheel.

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**Please amend claim 42 as follows:**

42 (once amended) A mixer apparatus as set forth in claim [4] 5 wherein

said plurality of wheels includes:

5 a first wheel;

a second wheel disposed spaced and coaxial relative to said first wheel;

a first load cell disposed between said first wheel and said frame;

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a second load cell disposed between said second wheel and said frame;

a third load cell having a first and a second end, said first end of said third load cell being secured to said frame;

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a clevis attached to said second end of said third load cell, said clevis being rotatable about a longitudinal axis of said third load cell and a tractor drawbar attached to said clevis, the arrangement being such that during a weighing operation which is dependent on measurements from said first, second and third load cells, said rotatable clevis is connected

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[connecting] to the tractor.

**Please amend claim 45 as follows:**

45 (once amended) A mixer apparatus for mixing livestock feed [and the like], said apparatus comprising:

5 a container for the reception therein of the feed;

said container including:

a housing;

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a wall extending away from said housing, such that substantially all of said wall is disposed above said housing, said wall defining an opening disposed above and remote from said housing for the reception therethrough of the feed, the arrangement being such that said housing and said wall define therebetween an enclosure for the feed received through said opening;

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an auger disposed within said enclosure, said auger having an axis of rotation extending substantially vertically through said housing;

20 said auger including:

a core;

flighting connected to said core so that when said auger rotates, feed disposed within said enclosure is mixed;

said flighting including:

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a first portion;

a second portion staggered relative to said first portion such that movement of the feed between said first and second portions is interrupted;

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said first portion having a first and a second end, said first end being disposed adjacent to said housing;

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said second portion having a first and a second extremity, said first extremity being disposed in an adjacent spaced relationship relative to said second end of said first portion;

a final driven wheel disposed within said housing, said final driven wheel being rotatable about said axis of rotation, said final driven wheel being drivingly connected to said auger so that when said final driven wheel is rotated within said housing, said auger is rotated therewith within said enclosure for mixing the feed;

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said final driven wheel and said auger together as a unit being removable and replaceable

relative to said housing and enclosure respectively, the arrangement being such that when said final driven wheel and said auger are together as said unit removed, direct access to said final driven wheel is permitted;

5      said final driven wheel being a driven pulley wheel [.];

[said] a drive wheel [being] which is a first drive pulley;

said mixer apparatus further including:

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a second drive pulley secured to said first drive pulley and disposed coaxially relative to said first drive pulley;

a drive extending around said first drive pulley and said final driven wheel so that when said

15      first drive pulley is rotated, said drive rotates said final driven wheel;

a further final driven wheel, said further final driven wheel being a further driven pulley wheel;

20      a further drive extending around said second drive pulley and said further final driven wheel so that when said second drive pulley is rotated, said further drive rotates said further final driven wheel [.];



said drive being a first belt drive; and

said further drive being a second belt drive.